UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,566	04/19/2004	Virinder Mohan Batra	CHA920040004US1	3188

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HOFFMAN WARNICK & D'ALESSANDRO, LLC
75 STATE STREET
14TH FLOOR
ALBANY, NY 12207

EXAMINER
GORTAYO, DANGELINO N

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>19 July 2007</u>.

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-20</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-20</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>19 April 2004</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All   b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____ .

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

7/19/2007 has been entered.

Response to Amendment

2.   In the amendment filed on 6/20/07, claims 1, 7, 8, 15, 16, and 19 have been

amended. The currently pending claims considered below are Claims 1-20.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claims 1-6, 8-14, 16-18, and 20 are rejected under 35 U.S.C. 102(b) as being

anticipated by Farmer (WO 02/39486)

As per claim 1, <u>Farmer</u> teaches "A system for dynamically implementing a chain of Web services from a client on the World Wide Web to execute a workflow," (see Abstract and paragraph 0008)

"comprising: a database for storing a list of available Web services, wherein each listed Web service includes a description of a task performed by the Web service, and wherein the Web service comprises a computer program accessible over the World Wide Web, and an input signature and an output signature of the Web service;" (paragraphs 0018, 0022, 0058, wherein a Service Broker accepts requests and provides connections to services, and contains service names, types, and attributes)

"and a selecting system for forming the chain of Web services by selecting a Web service from the list of available Web services for each of a plurality of tasks in the workflow," (paragraphs 0040, 0060, 0061, 0062, 0063, wherein services can be linked together and service attributes and classes are used for interaction)

"wherein the workflow comprises a series of linked tasks and a specified input and output format," (paragraphs 0040, 0042, 0043, 0045, 0046, 0053, wherein services interact and identify with each other through attributes, and are encapsulated to interact with each other)

"wherein the selecting system dynamically matches the input signature of a first Web service with the output signature of the adjacent Web service to ensure that each selected Web service is compatible with the adjacent Web service in the chain of Web services." (paragraph 0062, 0071, 0072, 0073, 0074, 0075, 0076, wherein the workflow

of services is dynamically created based on selected data and present components,

and a wrapper class is used to integrate services)

As per claim 2, <u>Farmer</u> teaches "the workflow comprises a microarray analysis

workflow." (Figure 2, paragraphs 0049, 0086)

As per claim 3, <u>Farmer</u> teaches "a workflow generator for creating the workflow."

(paragraphs 0049, 0050)

As per claim 4, <u>Farmer</u> teaches "the list of available Web services resides

locally with the client." (paragraphs 0039, 0044)

As per claim 5, <u>Farmer</u> teaches "a system for collecting and storing available

Web services data." (paragraphs 0018, 0022)

As per claim 6, <u>Farmer</u> teaches "a system for inputting sequence data into the

workflow execution." (paragraph 0067)

As per claim 8, <u>Farmer</u> teaches "A program product, stored on a recordable

medium for executing a workflow by dynamically implementing Web services from a

client on the World Wide Web," (see Abstract and paragraph 0008)

"comprising: means for storing a list of available Web services, wherein each

listed Web service includes a description of a task performed by the Web service, and

an input signature and an output signature of the Web service;" (paragraphs 0018,

0022, 0058, wherein a Service Broker accepts requests and provides connections to

services, and contains service names, types, and attributes)

"and means for forming a chain of Web services by selecting a Web service from the list of available Web services for each of a plurality of tasks in the workflow," (paragraphs 0040, 0060, 0061, 0062, 0063, wherein services can be linked together and service attributes and classes are used for interaction)

"wherein the workflow comprises a series of linked tasks and a specified input and output format," (paragraphs 0040, 0042, 0043, 0045, 0046, 0053, wherein services interact and identify with each other through attributes, and are encapsulated to interact with each other)

"wherein the forming means matches input signature of a first Web service and the output signature of an adjacent Web service to ensure that each selected Web service is compatible with the adjacent Web service in the chain of Web services." (paragraph 0062, 0071, 0072, 0073, 0074, 0075, 0076, wherein the workflow of services is dynamically created based on selected data and present components, and a wrapper class is used to integrate services)

As per claim 9, Farmer teaches "the workflow comprises a microarray analysis workflow." (Figure 2, paragraphs 0049, 0086)

As per claim 10, Farmer teaches "the workflow comprises a bioinformatics workflow." (paragraphs 0008)

As per claim 11, Farmer teaches "means for creating the workflow." (paragraphs 0049, 0050)

As per claim 12, Farmer teaches "the storage means resides locally with the client." (paragraphs 0039, 0044)

As per claim 13, <u>Farmer</u> teaches "means for collecting and storing available Web services data in said storage means." (paragraphs 0018, 0022)

As per claim 14, <u>Farmer</u> teaches "a system for inputting sequence data into the workflow execution." (paragraph 0067)

As per claim 16, <u>Farmer</u> teaches "A method for executing a bioinformatics workflow from a client on the World Wide Web," (see Abstract and paragraph 0008)

"comprising: providing a workflow having a plurality of linked tasks and a specified input and output format;" (paragraphs 0040, 0042, 0043, 0045, 0046, 0053, wherein services interact and identify with each other through attributes, and are encapsulated to interact with each other)

"providing a list of known bioinformatics Web services, wherein each listed Web service includes a description of a task performed by the Web service, and an input signature and an output signature of the Web service, further wherein the Web service comprises a computer program accessible over the World Wide Web;" (paragraphs 0018, 0022, 0058, wherein a Service Broker accepts requests and provides connections to services, and contains service names, types, and attributes)

"selecting a Web service from the list of known bioinformatics Web services for each task in the bioinformatics workflow to form a chain of Web services, wherein the selecting step dynamically matches the input signature of a first Web service with the output signature of an adjacent Web service to ensure that each selected Web service is compatible with the adjacent Web service in the chain of Web services" (paragraph

0062, 0071, 0072, 0073, 0074, 0075, 0076, wherein the workflow of services is

dynamically created based on selected data and present components, and a wrapper

class is used to integrate services)

"and calling each selected Web service in the chain to execute the bioinformatics

workflow." (paragraphs 0040, 0060, 0061, 0062, 0063, wherein services can be linked

together and service attributes and classes are used for interaction to perform a user

query)

As per claim 17, Farmer teaches "the bioinformatics workflow comprises a

microarray analysis." (Figure 2, paragraphs 0049, 0086)

As per claim 18, Farmer teaches "the list of known bioinformatics Web services

resides locally to the client." ()(paragraphs 0039, 0044)

As per claim 20, Farmer teaches "the step of calling each selected Web service

includes the step of providing a set bioinformatics data to a first Web service in the

chain in the specified input format." (paragraph 0067)

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 7, 15, and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over

Farmer (WO 02/39486) in view of Yung et al. (US Patent 6,909,974 B2)

As per claim 7, Farmer is disclosed as per claim 1 above. Farmer does not

teach "the input signature comprises a FASTA XML format for a set of input sequences

and the output signature comprises an XML file format for providing spatial microarray

placement data."

Yung teaches "the input signature comprises a FASTA XML format for a set of

input sequences and the output signature comprises an XML file format for providing

spatial microarray placement data." (Figure 10, 12A, 12B, 13, column 12 line 20 –

column 13 line 2, column 19 line 60 – column 20 line 12, wherein XML format is used to

wrap information and provide communication between heterogeneous services in a

bioinformatics system, particularly XML input and output files).

It would have been obvious to one of ordinary skill in the art to combine Farmer's

method of allowing interoperation of heterogeneous bioinformatics software services

with Yung's ability to utilize XML formatted files in communicating between different

services linked in a workflow. This gives the user the ability to use XML when inputting

and outputting bioinformatics data in a workflow to provide the user of a bioinformatics

system a commonly used communication format, XML, and allows the user to define the

tags that identify attributes. The motivation for doing so would be to provide a

centralized biological information flow management system that requires less human

involvement and the possibility of error than previous systems (column 1 lines 44-63)

As per claim 15, <u>Farmer</u> is disclosed as per claim 1 above. <u>Farmer</u> does not

teach "the input signature comprises a FASTA XML format for a set of input sequences

and the output signature comprises an XML file format for providing spatial microarray

placement data."

<u>Yung</u> teaches "the input signature comprises a FASTA XML format for a set of

input sequences and the output signature comprises an XML file format for providing

spatial microarray placement data." (Figure 10, 12A, 12B, 13, column 12 line 20 –

column 13 line 2, column 19 line 60 – column 20 line 12, wherein XML format is used to

wrap information and provide communication between heterogeneous services in a

bioinformatics system, particularly XML input and output files).

It would have been obvious to one of ordinary skill in the art to combine <u>Farmer</u>'s

method of allowing interoperation of heterogeneous bioinformatics software services

with <u>Yung</u>'s ability to utilize XML formatted files in communicating between different

services linked in a workflow. This gives the user the ability to use XML when inputting

and outputting bioinformatics data in a workflow to provide the user of a bioinformatics

system a commonly used communication format, XML, and allows the user to define the

tags that identify attributes. The motivation for doing so would be to provide a

centralized biological information flow management system that requires less human

involvement and the possibility of error than previous systems (column 1 lines 44-63)

As per claim 19, <u>Farmer</u> is disclosed as per claim 1 above. <u>Farmer</u> does not

teach "the input signature comprises a FASTA XML format for a set of input sequences

and the output signature comprises an XML file format for providing spatial microarray

placement data."

<u>Yung</u> teaches "the input signature comprises a FASTA XML format for a set of

input sequences and the output signature comprises an XML file format for providing

spatial microarray placement data." (Figure 10, 12A, 12B, 13, column 12 line 20 –

column 13 line 2, column 19 line 60 – column 20 line 12, wherein XML format is used to

wrap information and provide communication between heterogeneous services in a

bioinformatics system, particularly XML input and output files).

It would have been obvious to one of ordinary skill in the art to combine <u>Farmer</u>'s

method of allowing interoperation of heterogeneous bioinformatics software services

with <u>Yung</u>'s ability to utilize XML formatted files in communicating between different

services linked in a workflow. This gives the user the ability to use XML when inputting

and outputting bioinformatics data in a workflow to provide the user of a bioinformatics

system a commonly used communication format, XML, and allows the user to define the

tags that identify attributes. The motivation for doing so would be to provide a

centralized biological information flow management system that requires less human

involvement and the possibility of error than previous systems (column 1 lines 44-63).

Response to Arguments

7.   Applicant's arguments with respect to the 35 U.S.C. 102 rejection of claims 1-20

have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Garner et al. (US Publication 2003/0033290 A1)

Bialic (US Patent 6,665,685 B2)

Birkett et al. (US Patent 7,110,890 B2)

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dangelino N. Gortayo whose telephone number is

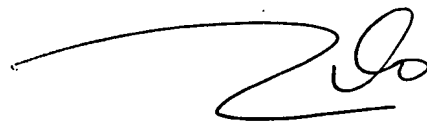(571)272-7204. The examiner can normally be reached on M-F 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tim T. Vo can be reached on (571)272-3642. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dangelino N. Gortayo   Tim T. Vo
Examiner   SPE

TIM VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100